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AUTHOR Au, Kathryn H.
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ABSTRACT

This Kamehameha Early Education Program (KEEP) report describes the development of a systematic program for teaching academic readiness skills to kindergarten children who require special help to develop attentional behaviors. The progress of eight kindergarten children (five boys and three girls) is described to illustrate the merit of the readiness program which focuses primarily on the development of attentional behaviors in children. Preposition and vocabulary training is provided with reinforcement given in the form of tokens and verbal praise. Fixed assigned places in the classroom reduce distraction, and repetition of phrases is used to reinforce listening behaviors. The children's interest is sustained through varying the lessons slightly from day to day. Finally, the necessity of developing attentional behaviors is discussed, and common teaching problems relating to these behaviors are identified. (CM)

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## The Kamehameha Early Education Program

The Kamehameha Early Education Program (KEEP) is a research and development program of The Kamehameha Schools/Bernice P. Bishop Estate. The mission of KEEP is the development, demonstration, and dissemination of methods for improving the education of Hawaiian and Part-Hawaiian children. These activities are conducted at the Ka Na'i Pono Research and Demonstration School, and in public classrooms in cooperation with the State Department of Education. KEEP projects and activities involve many aspects of the educational process, including teacher training, curriculum development, and child motivation, language, and cognition. More detailed descriptions of KEEP's history and operations are presented in Technical Reports #1-4.

Abstract

All the skills which comprise academic readiness have not been described, or agreed upon by all teachers. Generally, however, they include a certain level of ability to listen, to follow instructions, and to understand some aspects of language.

Roughly one-fourth of entering KEEP pupils have required systematic instruction in these readiness skills; others have arrived at school ready to be instructed. Occasionally, intense individual readiness programs have been needed (see Technical Report #9).

This paper, by Kathryn H. Au, describes the early stages of KEEP's efforts to develop a systematic program which would meet the needs of the 25% of children requiring it. Some elements of this program are now being researched more carefully, and 1975-76 will see a large-scale evaluation of our readiness program.

This Technical Report is addressed primarily to other teachers in the hope that Ms. Au's experiences may provide stimulating ideas for use in other classrooms.

The Editors

Technical Report #34

# A Preliminary Report on Teaching Academic Readiness

Kathryn H. Au

About 25% of the children enrolled in the KEEP school have enough problems with academic readiness to require special instruction. Of course, some preacademic skills must be taught to all our five-year olds; however, one-fourth of our pupils need instruction in very basic readiness areas, and their needs are so similar that a regular program of readiness instruction can be used.

The program ideas described in this paper require a great deal of systematic investigation, and several are now the subject of specific research. However, they have shown enough merit to make them the basis for our evolving readiness program, and perhaps they may stimulate other teachers to try them, to develop them, and to improve them.

The eight children who were in the special class described here all had scores of zero on a reading pretest given to their kindergarten class at the beginning of the second semester. About one-quarter of the way through the semester, a first grade girl from a nonEnglish-speaking home also joined the class. The kindergarten group consisted of five boys and three girls. All of the children's families receive financial assistance from the State. None of the children were problem children in terms of inappropriate or disruptive behavior, and all had shown progress since entering school, yet all were learning more slowly than their peers. The problem, as perceived by the teacher, was to give them skills which their academically more successful peers already possessed, and, in many cases,

had had before entering school. Thus, the special program focused on developing the students' attentional behaviors at the same time as other reading-related skills were also developed.

Attentional Behaviors

The development of attentional behaviors began with the easiest behaviors and progressed to the more difficult. The first set of behaviors had to do with having the child face the teacher. Students were seated at chairs behind tables arranged so that it was easy for them to look directly at the teacher. Children were asked to leave their hands folded on the table when not raised, to prevent them from touching other children or playing with pencils. They were also asked to sit with their chairs close to the table, and with all four legs of the chair touching the floor at all times. Attention to these details ensured a general body orientation to the teacher, and a minimum of potentially distracting physical movement.

The next set of behaviors had to do with visual attention. The students were told where to look, whether at the teacher or a stimulus object, but in either case, the directions were made as explicit as possible. In many cases, the teacher directed the students' attention even further by pointing to the object to be viewed.

The most difficult set of behaviors were those involving the students' listening to what the teacher was saying. This was a problem from the teacher's point of view, since it was impossible to tell if a student had actually been listening, other than by questioning. Again, the students were told exactly what to listen for. Many seemed to quickly develop the appearance of listening, but actually only continued to take in what was happening visually. Because of this, listening for information was much more difficult to shape up than looking.

While these attentional behaviors were being reinforced, other behaviors were being gradually extinguished or greatly reduced in frequency, such as looking away from the teacher or falling off one's chair. Many of these were at first maintained by the reinforcement the children provided for each other. It was felt to be more desirable to channel these interactions into acceptable routes rather than eliminate all of them. For example, the children wanted to help one another by providing correct answers to each other. Since this at least ensured that they were attending and knew the response themselves, it was not completely discouraged. Later, as it became more reinforcing to give the answer themselves and receive a token for their efforts, the situation gradually solved itself and answers were no longer whispered about.

Reinforcers

The teacher relied mainly on tokens paired with verbal praise to reward desired attentional and other responses. The tokens used were two-inch high plastic letters which were attractive and interesting to the children. The back-up reinforcer for the letters was the reading party described in Technical Report #26.

One of the most important reinforcers was the teacher's attention which came every time students were called upon to respond. Children were not called on unless they raised their hands and looked at the teacher. If a correct response was given, the teacher usually expressed her approval with words as well as with a token. Occasionally the teacher would also use physical contact as a reinforcer, by shaking hands with the children.

The attention of other children was also used as a reinforcer. The children were asked to clap for one another, for example, and when turns were being taken they were sometimes asked to call on another student who had his hand raised.

The children were given many privileges as reinforcers. One was choosing which color pen the teacher would use to write with on the overhead projector. Another was collecting the letters from classmates when the class was finished. Still another was reading aloud the names of the other children at the end of class. At other times, a child was asked to choose the next activity for the class to do.

Class Structure

A fixed routine was established with the goal of developing attentional behaviors that minimized distractions. The children were assigned places, and when the teacher told them it was time for reading, they all carried their chairs to their places at the tables. They were then told to put their heads down on their arms and wait for the teacher without talking. As soon as a child showed that he was attending, the teacher reinforced him with a token. Tokens were often accompanied by a statement which specified the appropriate behaviors such as, "You're showing me that you're ready for reading by being so quiet."

The children then raised their heads on the teacher's command of "Heads up" and the lesson would begin. The children were instructed to raise their hands if they wished to be called on. The hand-raising behavior proved an aid to both students and teacher, enabling the teacher to tell which children were attending and able to respond correctly, and giving the children a way to signal to the teacher that they knew the correct response.

The lessons were held twice a morning, and each usually lasted about 20 minutes with two or three different activities planned at a time.

The teacher recognized that there were differences in the children's backgrounds which enabled some to perform more difficult tasks than others. She attempted to give all children an equal opportunity to respond correctly

by giving more difficult tasks to some and easier tasks to others. At the end of the class, each child was called upon to count the number of tokens he had received during the course of the lesson. The teacher then wrote his name on the overhead projector, and beside his name the number of tokens he had. The child or children with the most tokens got a star for the reading party. This ritual had a great deal of value for the children; accurate counting was reinforced, and the children also had a concrete way of measuring their own performance. The teacher dismissed the students with the most tokens first, giving them much praise in front of the rest of the class.

Preposition Training

Preposition training proved to be more difficult than anticipated because certain words and phrases had no fixed meanings in the children's minds. The idea that "on top of" always meant something different from "under" was apparently not well-established. At the beginning of the semester, all of the children with one exception could respond to verbal commands, such as "put the book on the table" and differentiate between "put the book on the table" and "put it under the table." However, they could not correctly describe the two situations when given pictures of them. For example, given one picture with the book under a table, the children seemed to respond randomly, saying either, "under the table" or "on top of the table," in response to the question, "Where is the book?" They did the same when shown drawings on the overhead projector of objects that they named for the teacher to draw. Despite continuous reinforcement for correct responses, it seemed that no headway was being made. Differences between the children's skill in reception, shown by their ability to follow spoken directions, and their production skill, or ability to verbalize, were very apparent.

A different strategy was tried during the second phase of training in

which the children were asked to give commands to the teacher. A child would be shown a picture of a book on top of a table and the teacher would say, "Tell me how to do this." The child would then be reinforced if he could say, "Put the book on top of the table." The teacher would do exactly as the child said, and if he said, "Put the book under the table," the teacher would do so. In this way, the child was given immediate feedback and could tell immediately if he was right or wrong. She would then say, "Is this right?" and the child or his peers would give the appropriate answer. The idea behind the training was to apply natural contingencies as they would occur in the environment of any child learning to use words properly. Also, "instructing" the teacher was amusing. Prepositions eventually learned were on top of, under, inside, outside, between, and next to, and the situations shown on the stimulus cards eventually became quite complex.

Vocabulary

The aim of this training was to increase the children's vocabulary. While many of them did not always know labels for different objects, they could often describe their use. When shown a picture of a wig, one girl said, "That's what you put on your head when you go to a party," and for net a boy said, "That's what you use to catch fish." The materials used were 100 pictures with the names for the pictures written in block letters at the bottom of the card. The pictures were part of a basal reader program, and the words used represented each of twenty different initial consonant sounds to be learned later. Most of the pictures showed familiar objects but some showed unfamiliar ones, such as cork and map. Other objects were familiar ones but given different labels, for example jar, which the children called bottle, and quilt which they called blanket.

The procedure for learning the new words was much the same throughout

the term. In the case of new words, the teacher would first hold up a card and the children would raise their hands if they knew what it was. If no one knew, the teacher would name the object, then reinforce one or two children for repeating the correct response. Usually ten cards would be shown during one session, some well known and some not. Difficult cards remained in the pack until most of the children had learned them. The teacher would show the cards one at a time, and the children raised their hands if they wished to respond. They would then answer and, if correct, receive a letter. If a child answered incorrectly, another child would be called on. If the item was a difficult one, the teacher would often say so, and praise the child who responded correctly by making a statement such as "You learned that really hard one."

Repetition of Phrases

The materials used were Bill Martin Sounds of Language selections. One goal was to have the children repeat precisely what was said, and in doing so reinforce listening behaviors. Another was to have them memorize certain short selections so that they would learn the idea of reading: that writing could be used to record something that was said. The selections used also enabled them to develop a sense of the predictability of language and to learn to use language cues.

At first the teacher held up a book and read a short phrase, and one child was called upon to repeat it. For some of the children even the precise repetition of short phrases was quite difficult at the beginning. The phrases were gradually made longer and longer, and eventually the teacher no longer said any of the phrases as the pictures in the stories became cues for the children to recite whole selections by themselves. A number of selections were memorized in this fashion, and eventually some sight

vocabulary was taught from the selections.

Sight Vocabulary

It was not intended to begin instruction in sight vocabulary during the semester. However, after it became apparent that many children could read the names of almost everyone in the group, some instruction in sight vocabulary was given. The sight vocabulary training capitalized on the selections that most of the children had memorized. A favorite story was chosen and the children's own names were substituted in short sentences. Seeing or hearing their names read proved to be very pleasing.

The materials were words written on file cards and placed in a holder. The words were arranged in a short sentence in the holder and children were called upon to read the "story." The story could remain the same for several rounds with only different children's names being substituted. At first the teacher pointed to the words to be read to reinforce reading from left to right, and later the children were able to read the short sentences without any aid.

Learning was at first hindered because many of them had not yet realized that words were individual units with fixed pronunciations. Where they had earlier rattled off phrases and whole stories, they had now to attend to individual words as stimuli. However, most were soon reading word by word quite deliberately.

Training was also given in the reading of individual words in isolation. A card with a single word printed on it was held up and a child would be called upon to read the word. This type of drill was helpful in leading the children to attend to the slight differences in similar words, such as Daddy and David. In such a case, the child would be required to attend not only to the initial consonant but also to other letters within the word to read it properly.

Sustaining Interest

Much of the training described took a great deal of time and many, many trials. It became very important for the teacher to try to vary the lessons slightly from day to day, and to make them as interesting for the children as possible. Rigorous training in specific skills, which it was felt would be of the most use to these children, is often inherently dull. The teacher sought to sustain the children's interest and lively involvement through the use of little tricks. Such comments as, "I have something new for you today" or "We're going to do something different" accompanied by some change in materials or routine kept the classes moving. She would also challenge the children by saying that she was trying to trick them. This would often motivate them to concentrate a little more in order to have the satisfaction of showing her that they were too clever to be tricked. The use of the overhead projector also fascinated the children. They waited for turns to write on it and enjoyed seeing pictures drawn for them.

## Discussion

Perhaps one-fourth or more of the children in many classes in lower income areas seem to require a special program which will provide them with instruction in skills needed before beginning to read. The procedures described in this paper were aimed at developing certain skills which seemed to be of this kind. Good attentional behaviors formed the basis for the program.

The development of attentional behaviors means beginning at a very rudimentary level. Because most middle class children learn to attend well to adults long before entering school, attentional behaviors may easily be viewed as something children should already know. In fact, it may seem so obvious that a child should be looking at and listening to the teacher, that

these might not even be regarded as skills in themselves, much less skills that should be taught in school.

Many teachers do recognize the need to develop attentional behaviors, and it may be this very concern that gives observers the impression that many primary classrooms are too structured and routine oriented, with too little time spent on academics. Children appear to spend too much time lining up, putting their heads down, or being quiet. This apparent waste of time may be the result of teachers realizing the need to maintain children's attention, and, therefore, trying to minimize distractions. However, since these efforts are usually not part of a systematic program, they do end up taking a great deal of time.

It is certainly not the intent to recommend a full school day of intensive specific-skill training, but rather to suggest a daily plan in which there is a balance between structured skills training and lively social interaction. A program in which attentional and other appropriate behaviors would be developed systematically might in the long run, save a great deal of teacher and student time, which could then be used in ways more enjoyable to all.

One problem in building attentional skills is in determining exactly when a child is attending and when he is not. Many children soon after entering school become skilled in giving the appearance of attending. One need only face the teacher, in some cases, or pick up a pencil and hunch over a piece of paper in others. A teacher is usually able to tell when looking at a child's face or at his assigned paper if he has been attending or not. However, it is extremely difficult for a teacher or an observer who does not have frequent close contact with the child to make the discrimination between attending and nonattending.

One way of getting around this problem, particularly in situations in which all of the class is supposed to be attending to the teacher, is by shaping easily observable behaviors which become associated with attending. Hand raising is one behavior that is frequently used. The idea of many children waving their hands frantically in the air may seem peculiar, but hand raising is a simple device which enables the teacher to discriminate attending from nonattending. Of course, contingencies must be carefully controlled. The children must be taught that if they raise their hands they will be called on to respond, and, therefore, should know the correct response to the teacher's questions. If correct responding is carefully reinforced by the teacher, the children will soon learn that they have to attend to the lesson, as well as raise their hands, and those who are not attending will not raise their hands.

Once the children are attending, it becomes important to train them to look and listen for significant information. It is often said that the listening skills of disadvantaged children need much development. In the procedures described, an attempt was made to train listening skills by basing correct responding on the child's repeating what the teacher had said. In the vocabulary training, the teacher told the child the name for the object in the picture and the child was reinforced for repeating it. In the phrase repetition, the child again had to repeat what was said by the teacher. To repeat accurately, the child had first to attend and hear the teacher's words. These were imitational behaviors, and the child was not called upon to make use of information gained auditorily in a very complicated way.

The preposition training required a different kind of skill. It was found at first that just reinforcing the children for imitating the teacher's

words did not teach them to use the proper words in the presence of the stimulus card. Reinforcement gave them an imitational repertoire, but not other skills needed to produce the proper response. These other skills included learning to discriminate visually between similar cards, such as one showing a book on top of a table and another showing it under the table. Attention to the relevant cues in the stimulus card, for example, the position of the book, was another skill. In addition, it was necessary for the children to attach the proper label, "on top of" or "under," to describe the relationship of the objects shown in the stimulus card. Thus, once the children had the phrases in their speech repertoire, it was necessary to change the training to develop other skills also needed to make the proper verbal response. The use of natural language contingencies in this type of training in which the teacher did exactly as the child said, proved to be quite effective.

There is an urgent need to develop effective skills-training programs in the area of what is usually called readiness. Systematic training of attentional behaviors, which seems so important, is rarely, if ever, provided. At the kindergarten or preschool level, it seems that attentional behaviors should be regarded as academic behaviors and treated as such. In the program described here, an effort was made to teach other skills at the same time that attentional behaviors were being heavily reinforced, with the assumption that the emphasis on attentional behaviors would facilitate the learning of the other skills. Areas covered included the building of a strong imitational repertoire and then repertoires of discrimination, attention to relevant cues, and proper labeling through the use of language contingencies as they might occur in the environment. It should be possible to design experiments to test the effectiveness of different methods of providing training in skills like these, and to find out which skills have the most to contribute in helping the child learn to read.